

IN THE CLAIMS:

1. (Previously Presented) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a bonnet coupled to said body;

a valve stem operatively coupled to a gate positioned in said body, wherein said valve stem is operatively coupled to a roller screw;

a valve stem seal positioned around said valve stem, wherein a sealed cavity exists above said valve stem seal; and

an opening formed in said bonnet, said opening being in fluid communication with said sealed cavity and an interior region of said body, said opening allowing a pressure of said working fluid to be exerted in said sealed cavity above said valve stem seal.

2. (Previously Presented) The device of claim 1, wherein said opening further extends through at least a portion of said body.

3. (Canceled)

4. (Previously Presented) The device of claim 1, wherein said bonnet is formed integrally with said body.

5. (Canceled)
6. (Original) The device of claim 1, wherein said valve stem seal is a bi-directional seal.
7. (Previously Presented) The device of claim 1, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.
8. (Previously Presented) The device of claim 1, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.
9. (Previously Presented) A device adapted to have a working fluid flow therethrough, said device comprising:
 - a body;
 - a bonnet coupled to said body;
 - a valve stem operatively coupled to a gate positioned in said body, wherein said valve stem is operatively coupled to a roller screw;
 - a valve stem seal positioned between said valve stem and said bonnet, wherein a sealed cavity exists above said valve stem seal; and
 - an opening formed in said bonnet that allows a pressure of said working fluid to be exerted in said sealed cavity above said valve stem seal.

10. (Canceled)
11. (Original) The device of claim 9, wherein said valve stem seal is a bi-directional seal.
12. (Original) The device of claim 9, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.
13. (Original) The device of claim 9, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.
14. (Previously Presented) A device, comprising:
 - a body;
 - a bonnet coupled to said body;
 - a valve stem operatively coupled to a gate positioned in said body, wherein said valve stem is operatively coupled to a roller screw;
 - a valve stem seal positioned between said valve stem and said bonnet, wherein a sealed cavity exists above said valve stem seal; and
 - an opening formed in said bonnet, said opening being in fluid communication with said sealed cavity and an interior region of said body.
15. (Canceled)

16. (Original) The device of claim 14, wherein said valve stem seal is a bi-directional seal.

17. (Original) The device of claim 14, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.

18. (Original) The device of claim 14, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.

19. (Previously Presented) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a bonnet coupled to said body;

a valve stem operatively coupled to a gate positioned in said body, wherein said valve stem is operatively coupled to a roller screw;

a valve stem seal positioned around said valve stem, wherein a sealed cavity exists above said valve stem seal; and

an opening formed in said bonnet that allows a pressure of said working fluid to be exerted in said sealed cavity above said valve stem seal.

20. (Canceled)

21. (Original) The device of claim 19, wherein said valve stem seal is a bi-directional seal.

22. (Previously Presented) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a bonnet coupled to said body;

a valve stem operatively coupled to a gate positioned in said body, wherein said valve stem is operatively coupled to a roller screw;

a valve stem seal positioned between said valve stem and said bonnet, wherein a sealed cavity exists above said valve stem seal; and

an opening formed in said bonnet that allows said working fluid to enter said sealed cavity, thereby exerting a pressure of said working fluid in said sealed cavity above said valve stem seal.

23. (Canceled)

24. (Original) The device of claim 22, further comprising a filter positioned in a recess formed in said bonnet over said opening so as to filter said working fluid flowing through said opening in said bonnet and into said sealed cavity.

25. (Original) The device of claim 22, wherein said valve stem seal is a bi-directional seal.

26. (Original) The device of claim 22, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.

27. (Original) The device of claim 22, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.

28. (Original) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a bonnet coupled to said body;

a valve stem operatively coupled to a gate positioned in said body;

a bonnet cap coupled to said bonnet;

a roller screw assembly operatively coupled to said valve stem, said roller screw assembly comprising a housing, a portion of which extends through said bonnet cap;

a first valve stem seal positioned between said valve stem and said bonnet, a second seal positioned between said bonnet cap and said bonnet, and a third seal positioned between said bonnet cap and said housing, wherein a sealed cavity exists above

said first valve stem seal, said sealed cavity being defined by a portion of said bonnet cap, said first valve stem seal, said second seal and said third seal; and an opening through said bonnet that allows said working fluid to enter said sealed cavity, thereby exerting a pressure of said working fluid in said sealed cavity above said valve stem seal.

29. (Original) The device of claim 28, further comprising a filter positioned in a recess formed in said bonnet over said opening so as to filter said working fluid flowing through said opening in said bonnet and into said sealed cavity.

30. (Original) The device of claim 28, wherein said first valve stem seal is a bi-directional seal.

31.-65. (Canceled)

66. (Currently Amended) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a solid valve stem having a first end operatively coupled to a gate positioned in said body

and a second end opposite said first end, said second end of said valve stem

having an end face;

a valve stem seal positioned around said solid valve stem, wherein a sealed cavity exists above said valve stem seal and said end face of said second end of said valve stem; and

an opening in fluid communication with said sealed cavity and an interior region of said body, said opening allowing a pressure of said working fluid to be exerted in said sealed cavity on an entirety of said end face of said second end of said valve stem.

67. (Previously Presented) The device of claim 66, wherein said opening extends through at least a portion of said body.

68. (Previously Presented) The device of claim 66, wherein said opening extends through a bonnet coupled to said body.

69. (Previously Presented) The device of claim 66, wherein said opening extends through a bonnet that is formed integrally with said body.

70. (Previously Presented) The device of claim 66, wherein said valve stem is operatively coupled to a roller screw.

71. (Previously Presented) The device of claim 66, wherein said valve stem seal is a bi-directional seal.

72. (Previously Presented) The device of claim 68, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.

73. (Previously Presented) The device of claim 68, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.

74. (Previously Presented) The device of claim 66, wherein said opening allows working fluid to enter said sealed cavity.

75. (Previously Presented) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a bonnet coupled to said body;

a valve stem having a first end operatively coupled to a gate positioned in said body and a second end opposite said first end, said second end of said valve stem having an end face;

a valve stem seal positioned between said valve stem and said bonnet, wherein a sealed cavity exists above said valve stem seal and said end face of said second end of said valve stem; and

an opening formed in said bonnet that allows a pressure of said working fluid to be exerted in said sealed cavity on an entirety of said end face of said second end of said valve stem.

76. (Previously Presented) The device of claim 75, wherein said valve stem is operatively coupled to a roller screw.

77. (Previously Presented) The device of claim 75, wherein said valve stem seal is a bi-directional seal.

78. (Previously Presented) The device of claim 75, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet.

79. (Previously Presented) The device of claim 75, wherein said sealed cavity is at least partially defined by a bonnet cap that is coupled to said bonnet, a seal between said bonnet and said bonnet cap, and said valve stem seal.

80. (Previously Presented) The device of claim 75, wherein said opening allows working fluid to enter said sealed cavity.

81. (Currently Amended) A device adapted to have a working fluid flow therethrough, said device comprising:

a body;

a valve stem having a first end operatively coupled to a gate positioned in said body and a second end opposite said first end, said second end of said valve stem having an end face;

a valve stem seal positioned around said valve stem, wherein a sealed cavity exists above said valve stem seal and said end face of said second end of said valve stem; and an opening ~~through~~ formed in said body that allows a pressure of said working fluid to be exerted in said sealed cavity on an entirety of said end face of said second end of said valve stem.

82. (Previously Presented) The device of claim 81, wherein said valve stem is operatively coupled to a roller screw.

83. (Previously Presented) The device of claim 81, wherein said valve stem seal is a bi-directional seal.

84. (Previously Presented) The device of claim 81, wherein said opening allows working fluid to enter said sealed cavity.

85. (New) The device of claim 66, wherein, when said valve is placed in service, said pressure of said working fluid exerted on said entirety of said end face substantially balances pressure forces acting on said solid valve stem.

86. (New) The device of claim 75, wherein, when said valve is placed in service, said pressure of said working fluid exerted on said entirety of said end face substantially balances pressure forces acting on said valve stem.

87. (New) The device of claim 81, wherein, when said valve is placed in service, said pressure of said working fluid exerted on said entirety of said end face substantially balances pressure forces acting on said valve stem.